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EXAMINER	
SMITH, MARCUS	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,133	VARSA ET AL.	
	Examiner	Art Unit	
	MARCUS R. SMITH	2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 4/26/10.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5,7-11,13,15-17,20-25,27,31,33-35 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4, 5, 7-11, 13, 15-17, 20-25, 27, 31, 33-35, and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pre-appeal brief, filed 4/26/10, with respect to claims 1, 2, 4, 5, 7-11, 13, 15-17, 20-25, 27, 31, 33-35, and 37 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Davies (US 7,043,749).

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Objections

3. Claims 1, 13, 27, and 34 are objected to because of the following informalities: All these claims state the packet stream is transmitted over a constant delay, reliable transmission channel, but the system adjust packet stream transfer delay, which means the delay is not constant. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 2, 4, 5, 7-8, 13, 15, 20-22, 27, 31, 33-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harumoto et al. (US 2002/0004840) in view of Colavito et al. (US 20030152094) and Davies (US 7,043,749).

With regard to claim 1, Harumoto et al. teaches (see figures 3, 9, and 12): A method for receiving a packet stream at a client, comprising: estimating packet stream transfer delay variation (calculating TS), estimating parameters of a jitter buffer (reception buffer, 505) based on the packet stream transfer delay variation (calculates delta which is buffer occupancy at varies TS times: see figure 9, paragraphs 174-178); and transmitting to the server information indicative of an aggregate of the pre-decoder buffering parameters (decoder buffer, 508)and the jitter buffer (See steps 301 in figure 12, discussed in paragraph 182; wherein the terminal calculates (estimates) its own buffer occupancy and then sends its sum of its occupancy to the server. Also, Harmoto teaches in figure 21B (see paragraphs 17-19), how the buffer occupancy is based of the amount of data in the video/decoder buffer + reception buffer.).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service.

Harumoto and Colavito fails to disclose receiving from a server pre-decoder buffering parameters to ensure that the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel. However, Harumoto teaches how the client knows that decoder buffer size is 224 Kbytes and it must have uses a vbv delay in order to play the video on the client at a constant rate (paragraphs 8-11), but it fails to teach the client knows this information about the decoder buffer.

Davies teaches a gateway that sends video delay information to a terminal and the terminal returning back transit (jitter) delay inform to the gateway (see figure 4 and column 12, lines 10-35). Also, Davies teaches how the gateway and terminal exchanges the parameter information through the RTCP signals (see figure 10). So figure 10, states how the gateway can send a RTCP SR report with time parameter

information to the terminal and once the terminal receives that information, the terminal calculates its own delay parameter information. Then terminal sends a RTCP RR report with delay parameter information added on to the time parameter that the gateway sent to the terminal in order to synchronize the gateway and terminal (column 16, lines 10-40). Since column 12 teaches that the parameter that sends to terminal is the video delay, the parameter tgo in the RTCP SR report can be the video delay information.

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the terminal receives video delay information from the gateway (server) as taught by Davies to determine the decoder buffer information in the client of Haraumoto and Colavito in order to improve network efficiency by calibrating and synchronizing the gateway/server to the terminal (Davies: column 11, lines 25-41).

With regard to claim 13, Harumoto teaches (see figures 3, 9, and 12): A streaming client, comprising: a pre-decoder buffer (reception buffer, 505) for storing a packet stream from a server (page 6, paragraph 121); a media decoder (playback module, 510) for decoding the packet stream (page 6, paragraph 122); a buffer controller (CPU, 503) for estimating packet stream transfer delay variation (calculating TS), and for estimating parameters of a jitter buffer based on the packet stream transfer delay variation (calculates delta which is the buffer occupancy at varies TS times: see figure 9, paragraphs 174-178) and a signaling engine (transmission/reception module, 507) for providing information indicative of an aggregate of the pre-decoder buffering parameters and the jitter buffer to the server (See steps 301 in figure 12, discussed in paragraph 182; wherein the terminal calculates (estimates) its own buffer occupancy

and then sends its sum of its occupancy to the server. Also, Harmoto teaches in figure 21B (see paragraphs 17-19), how the buffer occupancy is based of the amount of data in the video/decoder buffer + reception buffer.).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service.

Harumoto and Colavito fails to disclose receiving from a server pre-decoder buffering parameters to ensure that the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel. However, Harumoto teaches how the client knows that decoder buffer size is 224 Kbytes and it must have uses a vbv delay in order to play the video on the client at a constant rate (paragraphs 8-11), but it fails to teach the client knows this information about the decoder buffer.

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Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the terminal receives video delay information from the gateway (server) as taught by Davies to determine the decoder buffer information in the client of Haraumoto and Colavito in order to improve network efficiency by calibrating and synchronizing the gateway/server to the terminal (Davies: column 11, lines 25-41).

With regard to claims 27 and 34, Harumoto et al. teaches (see figures 2, 9 and 12): A streaming server (101) for transmitting a packet stream to a client device (102), said streaming server comprising: a signaling engine (a transmission/reception module, 402) for receiving information indicative of an aggregate of the client's pre-decoder buffering parameters and a jitter buffer (See steps 301 in figure 12, discussed in paragraph 182; wherein the terminal calculates (estimates) its own buffer occupancy

and then sends its sum of its occupancy to the server. Also, Harmoto teaches in figure 21B (see paragraphs 17-19), how the buffer occupancy is based of the amount of data in the video/decoder buffer + reception buffer.), wherein parameters of the jitter buffer is estimated based on estimated packet stream transfer delay variation (calculates delta which is the buffer occupancy at varies TS times: see figure 9, paragraphs 174-178); and a rate controller (CPU, 412: paragraph 120) adapted to adjust a rate at which media data is transmitted from the server in accordance with the aggregate buffering parameters (see steps 304 or 305 in figure 12: paragraphs 183-186.).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service.

Harumoto and Colavito fails to disclose transmitting pre-decoder buffering parameters to ensure that the client is able to play out the packet stream without buffer

violation when the packet stream is transmitted over a constant delay, reliable transmission channel. However, Harumoto teaches how the client knows that decoder buffer size is 224 Kbytes and it must have uses a vbv delay in order to play the video on the client at a constant rate (paragraphs 8-11), but it fails to teach the client knows this information about the decoder buffer.

Davies teaches a gateway that sends video delay information to a terminal and the terminal returning back transit (jitter) delay inform to the gateway (see figure 4 and column 12, lines 10-35). Also, Davies teaches how the gateway and terminal exchanges the parameter information through the RTCP signals (see figure 10). So figure 10, states how the gateway can send a RTCP SR report with time parameter information to the terminal and once the terminal receives that information, the terminal calculates its own delay parameter information. Then terminal sends a RTCP RR report with delay parameter information added on to the time parameter that the gateway sent to the terminal in order to synchronize the gateway and terminal (column 16, lines 10-40). Since column 12 teaches that the parameter that sends to terminal is the video delay, the parameter tgo in the RTCP SR report can be the video delay information.

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the terminal receives video delay information from the gateway (server) as taught by Davies to determine the decoder buffer information in the client of Haraumoto and Colavito in order to improve network efficiency by calibrating and synchronizing the gateway/server to the terminal (Davies: column 11, lines 25-41).

With regard to claim 2, Harumoto teaches: wherein the pre-decoder buffering parameters received are chosen based on variable bit-rate characteristics of the transmitted packet stream and the buffering applied by the server (paragraph 171).

With regard to claims 4, and 20, Harumoto teaches (see figure 4): wherein the information indicative of the aggregate buffering parameters is transmitted to the server at beginning of a new streaming session (setup is at beginning session, page 6, paragraphs 125 and 131).

With regard to claims 5, 21, and the first part of claim 33, Harumoto teaches (see figure 5) determining parameters of the jitter buffer based on the estimated packet stream transfer delay variation during a streaming session and transmitting an aggregate of the pre-decoder buffering parameters and the changed jitter buffer during the streaming session (repeated s301 after s306: see paragraph 184).

With regard to claims 7, second part of 33, and 37, Harumoto teaches: wherein the streaming server is adapted to optionally consider the information indicative of the client's chosen pre-decoder buffering parameters in rate control and/or rate shaping (paragraph 190 and 191)

With regard to claims 8, 22, 31, and 35, Harumoto teaches: wherein the information indicative of the aggregate buffering parameters received by the server includes *at least one* of the following: information regarding a size of the client's pre-decoder buffer (paragraph 191), information regarding a pre-decoder buffering period, and information regarding a post-decoder buffering time.

With regard to claim 15, Harumoto teaches: further comprising a post-decoder buffer for storing media data after decoding (see figure 19C: I/P re-order buffer: paragraph 09).

7. Claims 9-11, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harumoto, Colavito and Davies as applied to claims 1/13above, and further in view of Deshpande (US 7,047,308).

Harumoto teaches a client sending a buffering parameters to SETUP /PLAY request command (see figure 4 of Harumoto) before the session starts and after the sessions starts (see figure 5 of Harumoto), step 108). And Davies teaches how the aggregate parameter information is in RTCP message but Harumoto, Colavito and Davies fails to disclose that the those commands are Real-Time Streaming Protocol (Play or Ping) messages.

However Deshpande teaches a system, in which client and server uses RSTP messages to communicate and inform with each other about their buffer parameters (column 4, lines 55-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to uses any RTSP (play or ping) message to relay buffer parameter to the server from the clients as taught by Deshpande in the system of Harumoto, Colavito and Davies in order to use a typical streaming media system to transmit packet streams (column 1, lines 40-45).

8. Claims 16-17are rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to claims 13/15 above, and further in view of Radha et al. (US 6,700,893).

With regard to claims 16-17, Harumoto, Colavito and Davies fails to disclose that the pre-decoder buffer and the jitter buffer are implemented as a single buffer unit.

Radha teaches a similar system of a server sending a packet stream to a client. Radha teaches a client device that has a pre-decoder buffer (ITD buffer) and a decoder (see figure 1: column 5, lines 45-60). Similar to Harumoto, the client device has a buffer controller (buffer management circuit, 510) that estimates delay, jitter, and bandwidth of the network (column 12, lines 20-35). However, Radha also teaches how parameter (listed above) may be from the streaming video transmitter, 110, (server). The examiner views the ITD buffer as contain both the jitter buffer and the pre-decoder buffer since the ITD buffer transmits data to decoder and handles jitter from the network (column 9, lines 1-11).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the a single buffer unit to be a jitter buffer and a pre-decoder buffer as the ITD buffer taught by Radha in the system of Harumoto, Colavito and Davies in order to improved streaming data receivers (Radha: column 2, lines 35-40).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS R. SMITH whose telephone number is

(571)270-1096. The examiner can normally be reached on Mon-Thurs: 8:30 am - 5:00 p.m. and Friday is a telework day.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on 571 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRS 8/13/10

/Michael J. Moore, Jr./
Primary Examiner, Art Unit 2467